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10/694,356

10/28/2003

Shuichi Seki

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05/22/2006

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EXAMINER

BODDIE, WILLIAM

ART UNIT

PAPER NUMBER

2629

DATE MAILED: 05/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/694,356

Applicant(s)

SEKI, SHUICHI

Examiner

William Boddie

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☒ Claim(s) 3 and 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/28/03.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. The term "a large number" in claim 1 is a relative term which renders the claim indefinite. The term "a large number" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Simply stating – a plurality of-- would seem to be a sufficient means to correct the claim.

Claim Objections

3. Claims 3 and 4 are objected to because of the following informalities: "for charging electrical charges". This wording is distracting and electrically incorrect. Substituting –supplying—for charging would see to correct the issue. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 7-9 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Sano (US 6,426,734).

With respect to claim 1, Sano discloses, a driving device (fig. 4) driving an active type light emitting display panel in which a large number of light emitting pixels are arranged (col. 1, lines 14-25), said light emitting pixel being comprised of at least a light emitting element (40 in fig. 4) and a driving TFT (20 in fig. 4) which lights and drives the light emitting element (col. 5, lines 55-61),

wherein said driving device of the light emitting display panel comprises a power supply means (V_o , 70, 80, 51-2 in fig. 4) for supplying light emitting driving power to the light emitting element by executing charge and discharge operations (V_{c2} in fig. 5) for a light emitting power holding capacitor (51-2 in fig. 4).

With respect to claim 2, Sano discloses, the driving device of the light emitting display panel according to claim 1 (see above) being constructed in such a manner that one or more charge and discharge operations (note rise and fall of V_{c2} in fig. 5) are executed for the light emitting power holding capacitor constituting the power supply means during a light emission driving time (1 light emission cycle in fig. 5) of the light emitting element for each scan (clear from fig. 5 that one or more charge/discharge operations occurs during a light emission period).

With respect to claim 7, Sano discloses, the driving device of the light emitting display panel according to claims 1 and 2 (see above), being constructed so as to sweep a supply voltage (voltage being applied is equivalent to V_{d1} in fig. 5) to the light emitting power holding capacitor (51-2 in fig. 4) in synchronization with the charge and discharge operations for the light emitting power holding capacitor (note the charging of

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the capacitor Vc2 corresponds to the downward sweep of Vd1, then discharge occurring when Vd1 is zero).

With respect to claims 8-9 and 14, Sano discloses, the active type light emitting display device according to claims 1-4 and 7 (see above), wherein the light emitting element is constituted by an organic EL element (col. 5, line 16) in which an organic compound is employed in a light emitting layer thereof.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3-4 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano (US 6,426,734).

With respect to claims 3/1,2, Sano discloses, the driving device of the light emitting display panel according to claims 1 and 2 (see above), wherein a unidirectional element (71 in fig. 4) for charging electrical charges in the light emitting power holding capacitor (51-2 in fig. 4) is provided in the power supply means.

Sano further discloses in a separate embodiment, a switching element (52 in fig. 2) supplying current to the light emitting power holding capacitor (51-1 in fig. 2).

Note the striking similarities between Vg3 in figure 3, which is controls the voltage applied to the capacitor in figure 3, and Vo which is supplied to the unidirectional element.

It would have been obvious to one of ordinary skill in the art to alternate the Vo voltage of the second embodiment of Sano with the switching element described in the first embodiment.

The motivation for doing so would have been so that charging and discharging occurs causing the EL device to emit light (col. 7, lines 63-67) and to improve the aperture ratio of the display apparatus (col. 9, lines 1-2).

Therefore it would have been obvious to combine the two different embodiments of Sano for the benefit of a larger aperture ratio to obtain the invention as specified in claims 3/1,2.

With respect to claim 4/3-1, 3-2, Sano discloses, the driving device of the light emitting display panel according to claim 3 (see above), Sano further discloses, wherein at least the respective light emitting power holding capacitor (51-2 in fig. 4) and unidirectional element (70 in fig. 4) for charging electrical charges which constitute the power supply means are provided in the light emitting pixel including the light emitting element and the driving TFT (clear from fig. 4 that the capacitor and diode are included in the pixel).

With respect to claims 10-11, Sano discloses, the active type light emitting display device according to claims 3 and 4 (see above), wherein the light emitting element is constituted by an organic EL element (col. 5, line 16) in which an organic compound is employed in a light emitting layer thereof.

8. Claims 5-6 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano (US 6,426,734) in view of Ikeda (US 5,714,968).

With respect to claims 5/1,2 and 6, Sano discloses, the driving device of the light emitting display panel according to claims 1, 2 and 4 (see above).

Sano does not expressly disclose, wherein the driving TFT which lights and drives the light emitting element is constructed so as to operate in a nonlinear region.

Ikeda discloses, wherein a driving TFT (156 in fig. 2) which lights and drives the light emitting element (155 in fig. 2) is constructed so as to operate in a nonlinear region (VB in fig. 3; col. 5, lines 38-48; col. 6, lines 16-20).

Sano and Ikeda are analogous art because they are both from the same field of endeavor namely, in-pixel driving circuit construction and operation.

At the time of the invention it would have been obvious to construct the driving TFT of Sano as taught by Ikeda so as to operate it in a nonlinear region.

The motivation for doing so would have been to correct nonuniformity of luminance in the panel (Ikeda; col. 6, lines 16-20).

Therefore it would have been obvious to combine Ikeda with Sano for the benefit of uniformity of luminance to obtain the invention as specified in claims 5/1, 2 and 6.

With respect to claims 12-13, Sano and Ikeda disclose, the active type light emitting display device according to claims 5-6 (see above).

Sano further discloses, wherein the light emitting element is constituted by an organic EL element (col. 5, line 16) in which an organic compound is employed in a light emitting layer thereof.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Will Boddie whose telephone number is (571) 272-0666. The examiner can normally be reached on Monday through Friday, 7:30 - 4:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wlb
5/14/06

AMR A. AWAD
PRIMARY EXAMINER

